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09/660,386

PATENT

AMENDMENT IN RESPONSE TO
(OFFICE ACTION DATED DECEMBER 27, 2002)

REMARKS

Reconsideration of the application in view of the above amendments and the following remarks is requested. Claims 8-21 are in this application. Claim 8 has been amended. Claims 16-21 have been added to alternately and additionally claim the present invention.

The Examiner rejected claims 8-15 under 35 U.S.C. §102(e) as being anticipated by Ker et al. (U.S. Patent No. 5,572,394). For the reasons set forth below, applicant respectfully traverses these rejections.

Claim 8 has been amended and recites, in part,

"a first well of a second conductivity type formed in the semiconductor material, the first well having a dopant concentration;

"a first trigger region of the second conductivity type formed in the first well, the first trigger region being spaced apart from the first and second contact regions;

"a second well of the second conductivity type formed in the semiconductor material, the second well being spaced apart from the first well by a gap and having a dopant concentration; [and]

"a second trigger region of the second conductivity type formed in the second well, the second trigger region being spaced apart from the third and fourth contact regions, the first trigger region being positioned such that no other region having the second conductivity type lies between the first trigger region and the second trigger region." [Brackets added.]

In rejecting the claims, the Examiner pointed to n-well Rw3 shown in FIG. 9 of Ker as constituting the first well of claim 8, and the n+ region partially engaging the left sidewall of first well Rw3 as constituting the first trigger region. The Examiner also pointed to n-well Rw4a as constituting the second well of claim 8, and the n+ region partially engaging the left sidewall of second well Rw4a as constituting the second trigger region of claim 8.

The Ker reference, however, fails to teach or suggest that the first trigger region is positioned such that no other region having the second conductivity type

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lies between the first trigger region and the second trigger region as required by claim 8. As shown in FIG. 9, Ker teaches that an n+ contact region (connected to the PAD) is located between the first and second trigger regions. As a result, the n+ region partially engaging the left sidewall of second well Rw4a can not be read to be the second trigger region if the n+ region partially engaging the left sidewall of first well Rw3 is read to be the first trigger region.

Thus, since the n+ region partially engaging the left sidewall of second well Rw4a can not be read to be the second trigger region, claim 8 is not anticipated by the Ker reference. In addition, since claims 9-15 and 21 depend either directly or indirectly from amended claim 8, claims 9-15 and 21 are patentable over Ker for the same reasons as claim 8.

New claim 16 recites, in part,

"a gap region of the semiconductor material located only between the first and second wells;

"a first trigger region of the second conductivity type formed in the first well, the first trigger region being spaced apart from the first and second contact regions and contacting the gap; [and]

"a second trigger region of the second conductivity type formed in the second well, the second trigger region being spaced apart from the third and fourth contact regions and contacting the gap." [Brackets added.]

Thus, new claim 16 requires that the first and second trigger regions both contact the gap between the first and second wells. However, as shown in FIG. 9, Ker teaches that the n+ region located on the left side of well Rw3 (read by the Examiner to be the first trigger region) does not contact the gap (the region located only between n-wells Rw3 and Rw4a). As a result, claim 16 is not anticipated by the Ker reference. In addition, since claims 17-20 depend either directly or indirectly from claim 16, claims 17-20 are not anticipated by Ker for the same reasons as claim 16.

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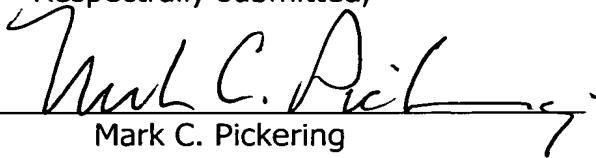
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Thus, for the foregoing reasons, it is submitted that all of the claims are in a condition for allowance. Therefore, the Examiner's early re-examination and reconsideration are respectively requested.

Respectfully submitted,

Dated: 3-24-03

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APPENDIXIn the Claims

Please amend the claims as follows:

8. (Twice Amended) A device formed in a semiconductor material of a first conductivity type, the device comprising:

a first well of a second conductivity type formed in the semiconductor material, the first well having a dopant concentration;

a first contact region of the first conductivity type formed in the first well;

a second contact region of the second conductivity type formed in the first well, the second contact region being electrically connected to the first contact region to have a same potential;

a first trigger region of the second conductivity type formed in the first well, the first trigger region being spaced apart from the first and second contact regions;

[a first conductive structure formed over and contacting the first and second contact regions;]

a second well of the second conductivity type formed in the semiconductor material, the second well being spaced apart from the first well by a gap and having a dopant concentration;

a third contact region of the first conductivity type formed in the second well;

a fourth contact region of the second conductivity type formed in the second well, the fourth contact region being electrically connected to the third contact region to have a same potential; and

a second trigger region of the second conductivity type formed in the second well, the second trigger region being spaced apart from the third and fourth contact regions, [the second trigger region not contacting the first conductive structure; and]

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[a second conductive structure formed over and contacting the third and fourth contact regions, the second conductive structure not contacting the first trigger region] the first trigger region being positioned such that no other region having the second conductivity type lies between the first trigger region and the second trigger region.

New claims 16-21 have been added.